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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,577	07/28/2003	Stephen M. Breit	P1714US01	5025

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CROWE AND DUNLEVY, P.C.  
20 NORTH BROADWAY  
SUITE 1800  
OKLAHOMA CITY, OK 73102-8273

EXAMINER
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NGUYEN, NINH H

ART UNIT	PAPER NUMBER
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3745

DATE MAILED: 02/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/632,577

Applicant(s)

BREIT ET AL.

Examiner

Ninh H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 07/28/03.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

### DETAILED ACTION

1. Claim 7 is objected to because of the following informalities: the limitation “the impeller hub profile” on line 1 of the claim should be --the impeller shroud line profile--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3,5-15, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kao (6,676,366).

Kao discloses a pump assembly (Figs. 1, 3, 4) having a longitudinal axis and comprising: a housing 20; and a first stage 12, the first stage comprising: an impeller assembly 40; and a diffuser assembly 64, wherein the impeller assembly and diffuser assembly are collectively configured to produce a diagonal flow path through the first stage (Fig. 4);

wherein the diffuser further comprising: a diffuser hub (Fig. 4) having a diffuser hub profile; and a diffuser shroud (see reproduced Fig. 4 at the end of this Office Action) having a diffuser shroud profile, wherein the diffuser hub and diffuser shroud cause fluid passing through the diffuser to converge towards the inner diameter of the stage;

wherein the diffuser hub profile is formed by the revolution of a first line segment that is inclined to the longitudinal axis of the pump assembly (Fig. 4);

wherein the impeller 40 further comprising: an impeller hub having an impeller hub profile (Fig. 3); and an impeller shroud line having an impeller shroud line profile (reproduced Fig. 4), wherein the impeller hub and impeller shroud line cause fluid passing through the impeller to diverge towards the outer diameter of the stage (Fig. 4);

wherein the impeller hub profile is formed by the revolution of a third line segment that is inclined to the longitudinal axis of the pump assembly (Fig. 4);

wherein the impeller shroud line profile is formed by the revolution of a fourth line segment that is inclined to the longitudinal axis of the pump assembly (Fig. 4);

wherein the impeller further comprises a balance hole 58;

wherein the diffuser further comprises a thrust washer (col. 4, lines 48-51);

wherein the pump assembly comprises a plurality of stages (Fig. 4);

wherein each of the plurality of stages includes an impeller and a diffuser that are cooperatively configured to produce a diagonal flow path (Fig. 4); and

wherein different diagonal flow path are produced by the plurality of stages (Fig. 4).

3. Claims 1-7, 10-13, 15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Stjernstrom (3,936,225).

Stjernstrom discloses a pump assembly (Figs. 1-4) having a longitudinal axis and comprising: a housing 15; and a first stage (Fig. 1), the first stage comprising: an impeller

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assembly 5; and a diffuser assembly 3, wherein the impeller assembly and diffuser assembly are collectively configured to produce a diagonal flow path through the first stage (Fig. 1);

wherein the diffuser further comprising: a diffuser hub 13 having a diffuser hub profile (Fig. 1); and a diffuser shroud (inner casing; Fig. 1) having a diffuser shroud profile, wherein the diffuser hub and diffuser shroud cause fluid passing through the diffuser to converge towards the inner diameter of the stage (Fig. 1);

wherein the diffuser hub profile is formed by the revolution of a first line segment that is inclined to the longitudinal axis of the pump assembly (Fig. 1);

wherein the diffuser shroud profile is formed by the revolution of a second line segment not parallel or co-linear to the first sine segment that is inclined to the longitudinal axis of the pump assembly (Fig. 1);

wherein the impeller 5 further comprising: an impeller hub having an impeller hub profile (Fig. 1); and an impeller shroud line (inner casing shown at 4 of Fig. 1) having an impeller shroud line profile, wherein the impeller hub and impeller shroud line cause fluid passing through the impeller to diverge towards the outer diameter of the stage (Fig. 1);

wherein the impeller hub profile is formed by the revolution of a third line segment that is inclined to the longitudinal axis of the pump assembly (Fig. 1);

wherein the impeller shroud line profile is formed by the revolution of a fourth line segment that is inclined to the longitudinal axis of the pump assembly (Fig. 1);

wherein the pump assembly comprises a plurality of stages (col. 1, lines 34-36);

wherein each of the plurality of stages inherently includes an impeller and a diffuser that are cooperatively configured to produce a diagonal flow path (Fig. 1); and

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wherein different diagonal flow path are produced by the plurality of stages (Fig. 1).

***Allowable Subject Matter***

4. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Prior Art***

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure and consists of 2 patents.

Lee (5,623,616) and Tomitaro et al. (3,168,048) are cited to show different submersible pumps.

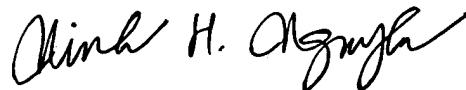
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (571) 272-4823. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (571) 272-4820. The fax number for this group is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, please go to <http://pair-direct.uspto.gov> or contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).



**NINH H. NGUYEN**  
**PRIMARY EXAMINER**

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January 31, 2006

